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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,678	12/22/2000	Mitchell D. Trott	15685P038	1645

8791 7590 04/21/2004

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EXAMINER

DAO, MINH D

ART UNIT PAPER NUMBER

2682

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,678

Applicant(s)

TROTT, MITCHELL D.

Examiner

MINH D DAO

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36-39 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. New claims 36-39 are allowed.

REASONS FOR INDICATING ALLOWANCE SUBJECT MATTER

2. The following is an examiner's statement of reasons for indicating allowance subject matter:

Regarding claim 36, cited references Gerlach (US Patent 5,471,647) and Gu et al. (US Patent 6,236,839) fail to teach a processing circuit for use with a transmission system employing an antenna array system, comprising: an input port to receive a first weight for a first downlink signal and a second weight for a second downlink signal; a processing circuit responsive to the port to determine a characteristic of a ghost signal that would result by the interaction of transmitting the first and second downlink signals and adjust the second weight to mitigate the ghost signal; and an output port to transmit the first weight and the second weight to the antenna array system.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

3. Applicant's arguments filed 01/26/04 have been fully considered but they are not persuasive.

Regarding claims 1, 20, and 28, Applicant argues that Gerlach fails to disclose ghost signal mitigation. However, the Examiner disagrees. Gerlach teaches a method for minimizing cross-talk that is known in the art to be the unintended or unwanted interference signals caused by transmitter intermodulation, co-channel, or adjacent-channel interference. Therefore, the cross-talk signal of Gerlach reads on ghost signal of the present application as indicated in the abstract of the application.

Regarding claim 5 and as mentioned above, transmitter intermodulation is one of the causes that creates unwanted interference signals therefor claim 5 remains rejected for the same reason set forth in previous office action.

Claims 4-7, 9-11 are dependent claims of claim 1. Claims 21-22 are dependent claims of claim 20. Claims 29-30 are dependent claims of claim 28. These dependent claims

are therefore still being rejected for the reasons stated below (included in the previous office action).

1. Claims 4,6-7,9-11,20-22, 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerlach et al. (US Patent 5,471,647).

Regarding claim 4, Gerlach teaches the method of claim 1, further comprising: varying the intensity of the interference mitigate region (Col. 3, lines 30-47; since the weights of the downlink are varied, the intensity of the interference mitigate region is also varied as claimed).

Regarding claim 6, Gerlach teaches the methods of claim 1, wherein the ghost signal effects a channel on which the downlink signal is transmitted (Col. 2, lines 41-43).

Regarding claim 7, Gerlach teaches the method of claim 1, wherein the downlink signal is transmitted on a first channel (Col. 2, lines 41-43).

Regarding claim 9, Gerlach teaches the method of claim 7, wherein the ghost signal further affects the first channel (Col. 2, lines 41-43).

Regarding claim 10, Gerlach teaches the method of claim 9, wherein the first channel is utilized by first remote user terminal at the location (Col. 3, lines 7-17, Col. 4, lines 5-14).

Regarding claim 11, Gerlach teaches the method of claim 10, wherein the first channel is further utilized by a second remote user terminal at a different location (Col. 3, lines 7-17, Col. 4, lines 5-14).

Regarding claim 20, Gerlach teaches a method for reducing ghost signal (Col. 3, lines 45-47; in this case, the ghost signal as claimed read on the cross-talk in reference Gerlach) interference caused by a transmitter Fig. 3A, Item 14) employing an antenna array (Fig. 1, item 12), the method comprising: determining that transmission of at least a first downlink signal by the transmitter will produce a ghost signal (Col. 2, lines 1-5); adjusting a downlink weight corresponding to the first downlink signal to mitigate the ghost signal (Col. 3, lines 30-33); and transmitting the first downlink signal in accordance with the downlink weight (Col. 3, lines 64-67).

Regarding claims 21 and 29, Gerlach teaches that the ghost signal is mitigated at a first location corresponding to a first remote user terminal (Col. 3, lines 7-17, Col. 4, lines 5-14).

Regarding claims 22 and 30, Gerlach teaches that the downlink signal tended for the first remote user terminal (Col. 3, lines 7-17, Col. 4, lines 5-14).

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

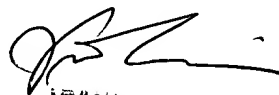
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH D DAO whose telephone number is 703-305-5589. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VIVIAN C CHIN can be reached on 703-308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Minh Dao
Examiner
Art Unit 2682
April 16, 2004 *mwp*


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

4/19/04